Interconnection Requirements for Distributed Energy Resources

Contract #: 700-99-010
Contractor: Onsite Sycom Energy Corporation
Contract Amount: $395,085
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Status: Completed

Project Description:
The purpose of the FOCUS-I project was to identify the barriers to Distributed Generation (DG) and make recommendations for removing those barriers, in the areas of interconnection, environmental review, and permit streamlining. This effort is critical for making DG, especially units smaller than 1 megawatt in size, a viable source of power for California in the future.

FOCUS-I is divided into the areas of:

1. Interconnection.
2. California Environmental Quality Act (CEQA) Review, Building Permitting and Air Permitting.

The interconnection portion of the FOCUS-I effort achieved 100% consensus on technical issues and 98% consensus on non-technical issues. The workgroup drafted Revised Rule 21 in interim and final versions. The California Public Utilities Commission adopted both late in 2000. Interconnection projects now use Revised Rule 21 for all DG interconnections in Investor-Owned Utility areas in California. Revised Rule 21 is estimated to have achieved approximately 50 percent efficacy in cost reduction, an average reduction in costs of approximately 37 percent for interconnection across all project sizes. The CEQA Review and permit streamlining tasks successfully identified all of the major permitting barriers and provided recommendations for their removal. One of the most important findings of the CEQA Review/Streamlining task is that training for regulators is essential to streamlining the DG siting process.

The project supports the PIER Program objectives of:

- Improving the reliability/quality of California's electricity system.
- Improving the availability of energy and capacity, as well as reducing its (wholesale) cost.
- Improving the safety of California's electricity by allowing DG to interconnect safely.
- Improving the positive impact on California's economy by providing greater power availability with more options for electricity users at lower DG installation costs.

Proposed Outcomes:

- Identify the barriers to Distributed Generation (DG).
- Make recommendations for removing those barriers, in the areas of interconnection, environmental review, and permit streamlining.

Actual Outcomes:

1. The outcomes resulting from the Interconnection portion of the FOCUS-I project included:
   - Facilitating consensus on the technical issues of interconnection.
   - Making interconnection a single uniform process which is internally consistent and predictable statewide.
   - Providing a method of Simplified Interconnection.
   - Exploring the role of advanced communications and metering for interconnection scheduling and dispatch.
   - Replacing the current prescriptive Interconnection Requirements (IRs) with Performance-Based Interconnection Requirements (PBIRs).
   - Lowering the cost of interconnection.
   - Fulfilling the need for interim standards.
   - Addressing safety issues.
   - Defining the scope and feasibility of type testing.
   - Accelerating DG adoption by training and informing government agencies.
   - Defining the scope of technologies covered by the Rule 21.
   - Making changes to utility tariffs proceeding from interconnection rules.
   - Facilitating interconnection of small units.
   - Eliminating utility discretion of study fees.
2. The outcomes resulting from the CEQA Review and Permit Streamlining portion of the FOCUS-I project included:
   - Identifying barriers and proposing solutions to streamline the CEQA Review and Land-Use Approval process.
   - Identifying barriers to DG in the building permitting process and producing recommendations for removing or mitigating those barriers.
   - Identifying barriers to DG in the air permitting process and producing recommendations for removing or mitigating those barriers.

Project Status:

This contract was completed on June 30, 2001. Recommendations were made in the final report for follow-on work to conduct case studies and further refinement of Rule 21. The case studies are needed to characterize the electrical effects of DG units on the distribution system. This follow-on work is being conducted in FOCUS II, contract #500-00-013. For the final report, please right click on www.energy.ca.gov/pier/final_project_reports/600-01-006.html